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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN BA, HOANG VU A

ART UNIT	PAPER NUMBER
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2623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/083,865	Applicant(s) KNUTSON ET AL.	
	Examiner Hoang-Vu A. Nguyen-Ba	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/24/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the amendment filed June 27, 2007.
2. Claims 1-18 are pending. Claims 1, 8 and 15 are independent claims.

Response to Amendments

3. Per Applicant's request, Claims 1, 8 and 15 have been amended.
4. The objection to the specification is withdrawn in view of Applicant's amendments to the Abstract.
5. The objection to Claims 1 and 8 is withdrawn in view of Applicant's amendment to these claims.

Response to Arguments

6. Applicants' arguments in the Remarks at pp. 8-9, filed concurrently with the above-mentioned amendment, have been fully considered but they are persuasive. Following is an examiner's response to Applicants' arguments.

Applicant's arguments:

It is submitted that none of the cited references, including Krasner, teach or suggest: "tuning circuitry operative to tune a first satellite television signal and a second satellite television signal" as recited by the currently amended claim 1, (emphasis added).

Examiner's response:

Contrary to Applicants' assertion, Krasner does appear to teach the claimed "tuning circuitry" in FIG. 1B, components 30, 31, 41), "first satellite signal" in FIG. 1A, GPS Antenna 1) and "second satellite signal" in FIG. 1A, GPS Antenna 2).

Applicant's arguments:

Furthermore, none of the cited references teach or suggest: "obtain carrier frequency offset data of one of the first and second satellite television signals" and

"provide the frequency stabilized oscillator signal via said communications line to uplink circuitry" as recited by the currently amended claim 1.

The present invention addresses the problem of errors generated by frequency differences or offsets present in two way satellite communication systems. The present invention solves this problem by receiving two incoming data streams with an outdoor unit era satellite communications system from a satellite, measuring a frequency offset from one of the two data streams using an indoor unit of satellite communications system, generating a frequency stabilized oscillator signal and providing the frequency stabilized oscillator signal to the outdoor unit for use as a reference oscillator to uplink circuitry in the outdoor unit and downlink circuitry in the outdoor unit. This frequency stabilized oscillator signal is provided to the outdoor unit via the same communications link on which the two incoming data streams are provided.

It is submitted that Krasner receives only one incoming satellite signal at a time, Switch 1 of Krasner is used to "select one of the two inputs to be outputted from the switch 1." (Col. 5, lines 1-2) Thus Krasner does not teach or suggest "tuning circuitry operative to tune a first satellite television signal and a second satellite television signal" as recited by the currently amended claim 1.

Examiner's response:

In response to Applicants' assertion that Krasner receives only one incoming satellite signal at a time. This statement infers that Applicants' invention requires receiving two satellite signals simultaneously. However, the claim language does not appear to recite this requirement because the claim merely recites "tuning circuitry operative to tune a first satellite television signal and a second satellite television signal." According to the claim language, the tuning circuitry can tune a first signal and a second signal consecutively or after a certain interval of time.

Applicants' arguments:

Furthermore, Krasner does not teach or suggest "provide the frequency stabilized oscillator signal via said communications line to uplink circuitry" as recited by the currently amended claim 1. (emphasis added) Krasner teaches a system wherein a frequency reference is generated for both a RF to IF converter in a receiver and an IF to RF converter for a transmitter. The frequency corrected RF signal is then supplied to a separately located RF transmitter.

Examiner's response:

The claimed "frequency stabilized oscillator signal" is met by Krasner disclosed signal out of the Dual PLL Synthesizer 42 in FIG. 1B, as component

42 is controlled by the Frequency Reference 43 which acts as a frequency stabilizer.

Applicants' arguments:

Krasner does not teach or suggest supplying the oscillator signal via the same communications line used to receive the satellite television signal. This feature is essential for two way satellite communication systems as home installations of satellite television systems traditionally use a single communications link between the outdoor unit and the indoor unit. Adding an additional communications link to accommodate the frequency stabilized oscillator signal would make the system undesirable from a practical standpoint.

Examiner's response:

The requirement of "supplying the oscillator signal via the same communications line used to receive the satellite television signal" does not appear to be recited in the claims.

Applicants' arguments:

It is submitted that since none of the cited references teach or suggest "tuning circuitry operative to tune a first satellite television signal and a second satellite television signal" or "obtain carrier frequency offset data of one of the first and second satellite television signals" and "provide the frequency stabilized oscillator signal via said communications line to uplink circuitry" as recited by the currently amended claim 1. Since claim 1 is novel and is not anticipated by any combination of the cited prior art it is submitted that claim 1 is allowable and such action is respectfully requested.

It is further submitted that independent claims 8 and 15 are also allowable for at least the same reasons that claim 1 is allowable. Such action is respectfully requested. Since dependent claims 2-7, 9-14, and 16-18 are dependent from allowable independent claims, that they too are allowable for at least the same reasons. Such action is respectfully requested.

Examiner's response:

Applicants' arguments with respect to "tuning circuitry..." "provide the frequency stabilized..." have been addressed above.

The claim requirement "obtain carrier frequency offset data of one of the first and second satellite signals" is met by Krasner disclosure of the Dual PLL Synthesizer 42 which in conjunction with the DSP IC 10 adjusts the

frequency of the oscillators 41 and 44 to correct the Doppler offset which is due to difference between the received carrier signal and the generated carrier frequency by the oscillator 41 and 44.

According to the foregoing discussion, the rejection of Claims 1-5, 7-12 and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,825,327 to Krasner and that of Claims 6, 13 and 18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,825,327 to Krasner in view of U.S. Patent No. 5,355,532 by Kubo et al. are proper and maintained.

7. Since Claims 15-18 have not been considered by the examiner in the previous Office action but have been addressed hereinafter, the present Office action is not made final.

Claim Rejections – 35 USC § 103

8. The following is a quotation of the 35 U.S.C. § 103(a) which form the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5, 7-12 and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,825,327 to Krasner.

Amended Claims 1, 8 and 15

Krasner discloses a GPS Receiver comprising at least:

tuning circuitry (see at least FIG. 1B, items 30, 31, 41) operative to tune a first satellite GPS signal (FIG. 1A, item "GPS ANTENNA 1") and a second satellite GPS signal (FIG. 1A, item "GPS ANTENNA 2") received from an outdoor unit of the satellite ground system via a communications line;

first processing circuitry in communication with the tuning circuitry and operative to obtain carrier frequency offset data of one of the first and second satellite television signals (see at least 6:14-23; it is noted that the Dual PLL Synthesizer 42 in conjunction with the DSP IC 10 adjust the frequency of the oscillators 41 and 44 to correct the Doppler offset which is due to difference between the received carrier signal and the generated carrier frequency by the oscillators 41 and 44);

oscillator circuitry operative to generate an oscillator signal (FIG. 1B, items 41-44) ; and

second processing circuitry in communication with the first processing circuitry and the oscillator circuitry, the second processing circuitry operative to frequency stabilize the oscillator signal utilizing the obtained carrier frequency offset data, and provide the frequency stabilized oscillator signal via said communications line to uplink circuitry and downlink circuitry of the outdoor satellite television signal unit (FIG. 1A, item 16 and FIG. 1B, item 42).

Krasner does not disclose that the system is a unit of television system. However, the system taught by Krasner does provide capability to track and receive two satellite signals and an uplink circuit to send signals up to the satellite (at least FIGs. 1A-B). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Krasner to receive and send television signals instead of GPS

signals for the purpose of reducing the costs of additional hardware (see at least 1:31-44) needed for a consumer ground station.

Claims 2, 9 and 16

Krasner further discloses *wherein the first processing circuitry includes a carrier tracking loop* (see at least FIG. 1B, item 42; it is noted that a phase lock loop is another term of art for carrier tracking loop).

Claims 3, 10 and 17

Krasner further discloses *wherein the carrier tracking loop includes a loop filter having an integrator, the carrier frequency offset data obtained from the integrator* (see at least FIG. 1B, item 42; it is noted that a phase lock loop or a carrier tracking loop comprises a low pass filter which is an integrator).

Claims 4 and 11

Krasner further discloses *wherein the first processing circuitry is further operative to generate a first processing circuitry oscillator control signal* (see at least FIG. 1B, items 42, 41 and 44).

Claims 5 and 12

Krasner does not specifically disclose *wherein the first processing circuitry oscillator control signal is generated by a numerically controlled oscillator*. However, Official notice is taken that a numerically controlled oscillator is another term for a digitally controlled oscillator (DCO), which is well known in the art to be an electronic system designed for the purpose of synthesizing a range of frequencies from a fixed timebase (see Wikipedia, definition of Numerically-

controlled oscillator). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute the DCO for device 42 to take advantage of the wider range of frequencies that the Dual PLL Synthesizer 42 in FIG. 1B of Krasner.

Claims 7 and 14

Does not specifically disclose *wherein the first processing circuitry is operative to obtain carrier frequency offset data of both the first and second satellite signals, and the second processing circuitry is operative to frequency stabilize the uplink oscillator signal utilizing the obtained carrier frequency offset data of both the first and second satellite signals* (see at least 6:14-23; FIG. 1A, item 16 and FIG. 1B, item 42).

Krasner does not disclose that the satellite signals are satellite television signals. Since the system taught by Krasner does provide capability to track and receive two satellite signals and an uplink circuit to send signals up to the satellite (at least FIGs. 1A-B). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system taught by Krasner to receive and send television signals instead of GPS signals for the purpose of reducing the costs of additional hardware (see at least 1:31-44) needed for a consumer ground station.

10. Claims 6, 13 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,825,327 to Krasner in view of U.S. Patent No. 5,355,532 by Kubo et al. ("Kubo").

Claims 6, 13 and 18

Krasner does not specifically disclose *wherein the first processing circuitry includes a satellite television signal demodulator*. In an analogous art, Kubo discloses a tuner-demodulator that is capable of receiving both a general television signal and satellite broadcast signal in a housing (FIG. 6) that is optimally designed for compactness (see at least 3:14-42).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Kubo's design of the tuner-demodulator in Krasner's system. One of ordinary skill in the art would have been motivated to use Kubo in Krasner in order to first provide Krasner with the capability of receiving satellite television signals and secondly to do so without compromising the compactness and mobility of the Krasner system.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu "Antony" Nguyen-Ba whose telephone number is (571) 272-3701. The examiner can normally be reached on Tuesday-Friday from 7:00 am to 5:30 pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, John Miller can be reached at (571) 272-7353.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2600 Group receptionist (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status

information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Hoangvn Antony Nguyen Ba". The signature is fluid and cursive, with the first name "Hoangvn" and last name "Nguyen Ba" being more legible than the middle name "Antony".

ANTONY NGUYEN-BA
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

September 16, 2007